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ABSTRACT

Recent research in metacognition suggests that efficient studying reflects the ability to employ deliberately planful or self-regulative study strategies. An instructional program based on this approach was developed to teach eighth graders how to study text. The sample of 50 eighth graders was divided into experimental (N=24) and control (N=26) groups. The training group received a series of 18 lessons over 9 weeks covering control of environment, allocation of time, stating appropriate goals, monitoring progress toward these goals, and extracting main ideas from text. Data analyses showed that the training significantly improved both knowledge about study skills (content) and reading performance as measured on the Iowa Test of Basic Skills. Results demonstrated an experimental effect on a standard reading measure, a comparative rarity in study skills research. Future research should emphasize a simpler study strategy and observational, as well as quantitative, outcome measures. (Author/JAC)

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Effects of training in planfulness on the performance of eighth graders

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Running Head: Study skills

The abundance of study skills programs in high schools is an indication that many people believe that training in study skills enhances student achievement. Yet, despite the abundance of programs, and despite the many years of research, empirical support for this belief has been slow to emerge. In an extensive review of the literature, Anderson (1980) concludes that many of the study aids that are commonly used in school (e.g. advanced organizers, study objectives, underlining, summarization) have failed to demonstrate consistent positive effects on studying. The reason for this lack of progress, according to Anderson and Armbruster (1980) is that traditional study skills research is theoretically impoverished. They suggest that to get a meaningful picture of how students study, we need to consider studying in the context of contemporary educational and psychological theory.

Conceptualizing studying within this new framework, Anderson (1980) sugggests that emphasis be placed on the student's goals and on his or her ability for self-direction. This psychological perspective is best exemplified by the notion of self-regulation. Self-regulation represents an operational approach to what Brown (1978) calls metacognition. Brown (1978) says that metacognition includes activities such as "predicting, checking, monitoring, reality testing, and coordination and control of deliberate attempts to study, learn or solve problems" (1980, p. 456). Brown (1980) further notes that these are the same skills that have been part of many study skills packages ever since the early work of Robinson (1941). The difference now, though, is that they are placed within the parameters of a psychological model of self

regulated activity.

Applying this model to the study of text, Brown (1980) suggests that efficient study requires the following steps:

1. Clarify the purpose of reading
2. Identify the important aspects of the message
3. Allocate attention to the important ideas
4. Monitor comprehension as you read
5. Engage in review and self-questioning
6. Take corrective action as required
7. Be able to recover from disruptions and distractions

In the current study, an instructional program was developed to apply these theoretical notions to children's studying. The training program consisted of a series of lessons on the components of self regulation that we had selected from the literature cited earlier. The children received instruction and practice in:

* how to control distractions in the environment
* how to record assignments
* how to allocate time appropriately
* how to identify specific study goals
* how to monitor progress toward their goals
* how to identify main ideas and details in prose passages.

The important distinction between this approach and more traditional ones, is that the children were given an explicit psychological rationale for each activity, and they also received instruction in how the components integrated to attain the overall goal of self regulation. Eighth graders were selected as the target population because, as Anderson (1980) points out, this age group has been much neglected in study skills research, while Brown and Smiley (1978) suggest that they are developmentally mature enough to employ these skills.

Method

Subjects

Two complete classes, comprising a total of 50 students, from a parochial school in New York City participated in the study. There were 14 boys and 36 girls in the sample.

Measures

1. Children's acquisition of the information that was imparted to them was measured by means of a 21 item pre- and post- multiple choice Content test.

2. Children's study performance was measured by administering alternate forms of the Iowa Test of Basic Skills, Reading Comprehension Subtest (ITBS), Level 14, and an experimenter-constructed comprehension test, before and after the intervention.

Procedure

The students were divided into two groups: a treatment group (n = 24) which received instruction in study skills for two class periods per week, for a nine week period in the autumn term; and a control group (N = 26) which received no training. Assignment to groups was based on teacher selection. As a result of this constraint all of the better readers were placed in the treatment group. Comparison of pretest scores for experimental and control groups confirmed that selection bias had a significant effect on group composition. However, comparison of the children in the lower half of the experimental group with the control group, based on beginning of year SRA reading scores, revealed no such differences. The design, therefore, consisted of a treatment group, divided on the basis of median ITBS scores, into upper and lower halves, with 12 students in each half, and a control group which matched the lower half on all pretest measures.

Results

To examine the effect of training on study performance, the lower half of the experimental group was compared to the control group on each of the posttest measures. Significant differences were found on the ITBS [$t(35) = 7.75$, $p<.001$], and on the Content test [$t(35) = 4.97$, $p<.001$], indicating that treatment had a positive effect both on children's knowledge of studying and on their performance in reading. No significant differences were

found on the experimenter-constructed comprehension test.

We then investigated the effects of prior knowledge and reading ability on the results. First, a comparison was made between pre- and posttest scores on the ITBS for the upper and lower halves of the experimental group. The results were not significant, indicating that prior reading level was probably not a significant factor in the ITBS gain discussed earlier. We then performed an analysis of covariance (ANCOVA), comparing the entire experimental group to the control group across all measures, using the pretest as a covariate. The results confirmed our earlier conclusion that the treatment group had acquired significantly more knowledge about study skills, as evidenced by significant differences on the Content test [F, (1,44) = 88.17, $p<.001$], and that they had improved in reading text, as evidenced by a significant improvement in their ITBS scores [F, (1,44) = 17.17, $p<.001$]. Once again there were no effects for the homemade comprehension test.

Discussion

These results demonstrate that the training was successful in improving both the children's knowledge of study skills and, more importantly, their performance on a standardized reading test. The failure to show gains on the experimenter-constructed comprehension test was probably due to the unreliability of this instrument. We consider this study of importance because it has

addressed the much-neglected issue (Anderson, 1980) of how to train efficient study skills at high school level, and because it has succeeded in demonstrating significant experimental effects on a standardized reading measure, a relatively infrequent occurrence in this field of research. We are nonethless aware of the shortcomings of the study reported here. One of these was that the procedure employed was complex and overly extended in time, thus making it considerably different from the natural study procedures that children probably apply spontaneously. Another is that in limiting ourselves to quantitiative posttest data we deprived ourselves of any insight into to how or when the children employed the strategies we taught them. Our current research is aimed at developing a simpler, more natural procedure, and at incorporating an observational measure so that we can observe the children's use of the trained study strategies.

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